TECHNICAL SPECIFICATIONS
FOR
CONSTRUCTION AREA TRAFFIC CONTROL

1. Contractor Responsibility and General Provisions

(a) The Contractor shall provide, erect, and maintain all traffic control devices necessary to preserve the safe and orderly movement of traffic. All operations shall be scheduled and conducted in such a manner and sequence as to cause the least practicable interference with the traveling public, fire protection, and public utility service.

(b) Payment for materials and labor associated with the required construction area traffic control shall normally be included in the pay item(s) provided by the Contract. In the event that no such pay item(s) are included, the Contractor shall include such costs in the prices bid for other appropriate Contract items.

(c) All necessary protective devices and operations shall be in accordance with the Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), published by the Federal Highway Administration. A Traffic Control Plan is included with many projects to define specific or typical traffic control needs. However, the Contractor may request a revision or addition to these plans of operation by making a written request in advance to the Director of Engineering.

(d) A project safety officer or other similarly responsible individual shall be made known to the Director of the Engineering Division prior to the commencement of construction. This notification shall include a telephone number or numbers where the individual(s) may be reached on a 7 day, 24 hour basis.

(e) Except as otherwise noted in the "Special Conditions," total road closures are not permitted. However, if the Contractor determines in his opinion that one is required, a written request shall be made at least 72 hours in advance to the Director of the Engineering Division for his consideration. This request shall state the reason for the closure, estimated duration of the closure, proposed traffic control devices, and the routing of detours, if necessary.

(f) Except as otherwise noted in the project "Special Conditions," the Contractor shall provide one adequate traffic lane, minimum of 10' in width, in each direction during the hours of 7:00 A.M. - 9:00 A.M. and 3:00 P.M. - 6:00 P.M.

During hours when work is not in progress, the Contractor shall also maintain one similarly adequate traffic lane in each direction. Exceptions to the above must be approved by the Director of Engineering.

(g) The Contractors attention is called to the *City of Knoxville Policy on Work Zone Traffic Control* (a copy of which is included at the end of this Specification following Section 6).

2. Installation and Maintenance of Traffic Control Devices

(a) The Contractor shall be fully responsible for the supplying, erection, and maintenance of all traffic control devices. These functions shall occur in a workmanlike manner such that all supports are vertical, sign panels generally perpendicular to the travelway and legends horizontal so that they effectively convey the intended message. Signs shall be mounted on stationary or portable supports dependent on the type work being performed. In general, work being performed at spot locations and of short duration will necessitate the use of portable supports properly weighted for stability.

(b) All existing traffic signs within the limits of this project shall also be the maintenance responsibility of the contractor for the duration of construction. This includes STOP and street name signs on side streets which intersect within the project limits. This responsibility shall include temporary sign relocations caused by construction activities.

The Contractor shall provide continuous and expeditious maintenance of all required traffic control devices. This shall include replacement of sign panel, barricades, and other devices which in the opinion of the Engineering Division are damaged or deteriorated beyond continued use, replacement of broken supports, plumbing of leaning signs, cleaning of dirty signs, barricades and other devices, repair of defaced sheeting and legends, replacement of stolen items, etc. All items used for traffic control shall be generally maintained in their original placement condition and such maintenance will be considered a part of the original installation cost. Failure to maintain all traffic control devices in such a manner as to provide continuous safety to the public will be cause for suspension of construction operations until proper traffic control is re-established.

(c) In the event that the Contractor, in the opinion of the Director of Engineering, has failed to provide or maintain adequate traffic control devices, the City of Knoxville shall have the right to provide the necessary items and deduct the expense of same from payments due the Contractor.

3. Application and Use of Traffic Control Devices

(a) Cones are not permissible as channelizing devices during hours of darkness. Standard barricades, drums or vertical panels are permissible, but where used to delineate vehicle paths during hours of darkness, they must be accompanied by steady-burn lights.

(b) Except as otherwise directed by the Director of Engineering or his representative, the Contractor shall maintain centerline striping throughout the duration of this project. Where a newly asphalted section of roadway is to be maintained overnight, temporary centerline and lane line stripes shall be provided by the Contractor at the conclusion of each work day. These stripes shall be a temporary reflective tape or paints with four-inch wide line segments. The segments shall be two feet long with thirty-eight foot gaps. Skip lines shall not be used for lane lines separating a turn lane from a through lane or for edge lines.

(c) All conflicting and confusing pavement marking shall be removed or obliterated in a fashion consistent with MUTCD, Section 6D-1. Painting over existing

striping is not considered to meet the requirements for removal or obliteration. The methods listed below are considered acceptable:

1) Sand blasting using air or water
2) High pressure water
3) Steam or super-heated water
4) Mechanical devices such as grinders, sanders, scrapers, scarifiers, and wire brushes
5) Solvents and chemicals
6) Burning

Any damage to the pavement or surfacing caused by the Contractor's pavement marking removal shall be repaired by the Contractor at his expense and by methods and materials acceptable to the Engineering Department.

(d) Short term operations will be permissible which conflict with existing pavement markings, but proper vehicle path must be ensured through the appropriate use of warning signs, flagmen and/or channelizing devices.

(e) Mesh or other fabric type signs are not considered acceptable for use during hours of darkness.

(f) Except in operations of short duration, where good sight distance is available, "Flagger Ahead" signs shall be installed where flaggers are required. Flaggers shall utilize STOP/SLOW paddles and proper attire, including a reflectorized orange vest.

Flagmen will be considered a general requirement of traffic control and no direct payment will be made for such.

(g) During periods of non-use, warning signs and other devices shall be promptly removed from the work area, covered or otherwise positioned so they do not convey their message to the traveling public. If covered, the covering material shall be maintained in a neat and workmanlike manner.

(h) The official maximum speed limit is to be used for determining taper lengths, device spacing, sign placement and other pertinent details unless otherwise notified.

4. Materials

Materials for all traffic control and marking devices shall be in accordance with the provisions of the current edition of the MUTCD. Exceptions are listed below with reference to the appropriate subsections of the TDOTSS, March 1, 2006.

Material	Subsection
Signs:	
Aluminum	916.02 (a)
Reflective Sheeting	916.06, Type III
Paint	916.09
Cold Rolled Carbon Steel-16 gal.	ASTM A366
Drums and Barricades:	
Reflective Sheeting	916.06, Type I

Temporary Pavement Marking Material:

The material for temporary traffic centerline and lane line marking shall be a pressure-sensitive, adhesive backed, reflective pavement marking tape, or reflectorized paint.

Cones:

Cones shall be a minimum of 28 inches high and weighted at the base.

In addition to the materials certifications required above, the Contractor shall submit a signed, notarized statement that the materials to be used for temporary traffic control comply with the above provisions. This statement shall be submitted prior to the beginning of the work.

5. Method of Measurement:

When the Bid Schedule stipulates that payment will be made for Construction Area Traffic Control on a Lump Sum basis, the pay item Construction Area Traffic Control will include all sign, barricades, lights, flag persons, temporary pavement markings and all incidentals required by this specification, the Traffic Control Plan included in the Contract Drawings, if any, and the Manual on Uniform Traffic Control Devices for Streets and Highways. Where the Bid Schedule stipulates that payment will be made for Specific Items on a unit basis, measurement will be made by the unit stipulated. Where the Special Conditions and/or notes on the construction drawings stipulate that the cost of Construction Area Traffic Control will be included in other Items Bid, no measurement will be made.

6. Basis of Payment

The accepted quantity of Construction Area Traffic Control will be paid for at the lump sum price bid, which price shall be full compensation for providing Construction Area Traffic Control for the duration of the project in accordance with the Traffic Control Plan provided with the construction drawings and/or submitted by the Contractor and these Specifications. This compensation shall include all labor, materials, equipment and incidentals necessary to complete the work.

The compensation shall be paid in accordance with the following schedule.

Percent of Total Contract on Partial Pay Estimate	Total Percent Allowed for Compensation for Lump Sum Item
5%	30%
50%	50%
75%	75%
100%	100%

POLICY ON WORK ZONE TRAFFIC CONTROL
CITY OF KNOXVILLE, TENNESSEE
February 10, 2009

I. Introduction

A. The proper use of warning devices in roadway construction and maintenance work areas must be planned in advance to meet the individual requirements of the job site. The objective of this policy is to provide maximum protection to employees, plant, equipment, and to the public while causing minimum interference to vehicular and pedestrian traffic.

B. When guarding work areas, always provide more protection than may appear necessary rather than under-protecting. Inadequate protection may promote accidents by presenting the driver or pedestrian with a false impression of the extent of the work area and the deviations that he must take from his route in order to safely pass the work area.

C. Early project planning for traffic control in construction and maintenance areas and implementation and surveillance of these controls during construction are very important.

II. Need for Standards

A. Problems of traffic control occur when traffic must be moved through, around, or adjacent to road or street construction, maintenance operations, and utility work. No one standard sequence of signs or other control devices can be set up as an inflexible arrangement for all situations due to the variety of conditions encountered.

B. The Manual on Uniform Traffic Control Devices (MUTCD) has been adopted as Federal and Tennessee Law. The MUTCD established principles to be observed in the design, installation, and maintenance of traffic control devices.

C. These principles and standards are directed to the safe and expeditious movement of traffic through work areas and to the safety of the work force performing those operations.

III. Responsibility

A. Adequate public protection shall be provided by contractors, public utility companies, railroads, State and City agencies performing any work on roadways or so closely adjacent as to create hazards or to restrict pedestrian or vehicular flow.

B. It is important that the authorities having jurisdiction be able to require proper protection, that responsibility be clearly assigned, adequate training of personnel be provided, and that there be adherence to the provisions of the MUTCD.

C. A temporary traffic control plan (TTCP) should include, but not be limited to such items as signing, application and removal of pavement and markings; construction; scheduling; methods and devices for delineation and channelization; placement and maintenance of devices; roadway lighting; traffic regulations; and surveillance and inspection.

D. A TTCP and permit form should be completed in detail to the complexity of the work project and noting the date of planned beginning of construction and duration shall be prepared by the contractor, public utility company, State or City agency proposing to do work on or adjacent to the roadway.

E. The TTCP shall be reviewed and approved by the Director of Engineering or his designee. Although every effort will be made to review the TTCP immediately upon submittal, a minimum of 48 hours should be allowed for review of the TTCP. The TTCP is to be approved by the Permitting Office at the City of Knoxville Engineering Department, 1400 Loraine Street, Telephone 215-6100.

F. When the TTCP and permit are approved, the City of Knoxville Engineering Department will fax the information to the following agencies:

AGENCY	PHONE NUMBER	FAX NUMBER
*E-911 - (Amy)	215-1141	215-1103
Knoxville Police Department - (Bryan Bates)	215-8622	215-7000
*Knoxville Area Transit (R. Boone)	215-7820	215-7800
Tennessee Dept. of Transportation (M. Dykes)	594-5626	594-4512
*Knoxville Fire Department (Steve Sherrod)	595-4482	595-4474

*(Total road closures only.)

G. When construction is required that will block one or more lanes of principal collector or arterial roadways or close any principal collector or arterial roadway, the responsible work authority shall notify the public. This is currently best handled by notifying the Permitting Office at the City of Knoxville Engineering Department, telephone 215-6100. The deadline for media notification is 2:00 P.M. for the next day release to radio.

H. Construction on or adjacent to local streets (traffic volumes of less than 1,000 vehicles-per-day) requiring one lane closures will only require implementation of adequate work zone traffic control procedures as outlined in the MUTCD.

IV. Road Closures

A. Total Road Closures for construction and maintenance activities are typically not permitted on principal collector or arterial roadways. Total road closures on secondary collectors and local streets will be considered on a case-by-case basis. Traffic control plans for total road closures must be sealed by a Professional Engineer registered in the State of Tennessee.

B. In the event of an emergency and there is no alternative but to close the roadway, adequate work zone traffic control procedures as outlined in the MUTCD shall be implemented. Notification of proper authorities must be made as soon as possible by contacting the E-911 Dispatcher at 215-4010.

V. Hours of Work

A. When construction is required that will block one or more lanes of a principal collector or arterial roadway, the hours of work shall be limited on weekdays to avoid conflict with peak hour traffic movement. Work on weekdays is permitted before 6:00 A.M., from 9:00 A.M. to 3:00 P.M., and after 6:30 P.M. Work is

permitted during off peak conditions and on weekends (except for unusual circumstances, i.e. parades, U.T. football games, etc.). More liberal hours are typically allowed on local streets. Work during peak hours in the off peak travel direction is often permitted. Other arrangements may be approved on a case-by-case basis.

B. When an emergency occurs that requires total road closure on a principal collector or arterial roadway, every effort should be made to make the repairs as soon as possible. Notification of proper authorities must be made as soon as possible by contacting the E-911 Dispatcher at 215-4010. Overtime should be authorized for evening and weekend work.

VI. Street Cut Permits

A. When the work requires that city streets be cut, a permit shall be required from the Permitting Office at the City of Knoxville Engineering Department, 1400 Loraine Street. On an emergency basis, these permits may be obtained by notifying the City of Knoxville Engineering Department at 215-6100 and then following up with a written request as soon thereafter as practical. In routine situations, a written request outlining the need for cutting the street, the proposed location, the proposed date of work and the contractor involved shall be supplied in writing to the individuals at the City of Knoxville Engineering Department at Loraine Street, preferably 48 hours in advance of the cut.

B. Construction standards are available at the City of Knoxville Engineering Division offices at 1400 Loraine Street and on the City's website: http:/www.cityofknoxville.org.

VII. Principal Collector and Arterial Roadways

For purposes of this policy, the following shall be defined as principal collector or arterial roadways. Time restrictions apply. See Sec. V. A., Hours of Work.

A. All streets in the Central Business Improvement District (CBID). See map on page TS-34.0-13.

B. Principal collectors, arterials and selected minor collectors:

Adair Drive, Bruhin Road to Sanders Drive
Ailor Avenue, Western Avenue to 21st Street
Alcoa Highway
Amherst Road, Middlebrook Pike to McKamey Road
Anita Drive, Sevier Avenue to Hillwood Drive
Asheville Highway
Atlantic Avenue, Central Street to Broadway
Ault Road, Buffat Mill Road to Hillview Avenue

Ball Camp Pike, Western Avenue to John May Road
Baxter Avenue, Beaumont Avenue to Central Street
Beaumont Avenue, Baxter Avenue to Keith Avenue
Bennington Drive, Corteland Drive to Vanosdale Road
Bernard Avenue, Elm Street to Central Avenue
Beverly Road, Tazewell Pike to Greenway Drive
Blount Avenue, Gay Street to Maryville Pike

Boyds Bridge Pike, Brooks Avenue to Holston River Bridge
Bradshaw Garden Drive, Pleasant Ridge Road to Clinton Highway
Bradshaw Road, Ball Camp Pike to Pleasant Ridge Road
Bridgewater Road, Cross Park Drive to Kingston Pike
Broadway
Brooks Avenue, Dandridge Avenue to Boyds Bridge Pike
Broome Road, N. Gallaher View Road to Middlebrook Pike
Bruhin Road, Inskip Drive to Heiskell Avenue
Buckingham Road, Kingston Pike to Vanosdale Road
Buffat Mill Road, Whittle Springs Road to Loves Creek Road

Cecil Avenue, Broadway to Cherry Street
Cedar Bluff Road, Kingston Pike to Cross Park Drive
Cedar Lane, Central Avenue Pike to Broadway
Central Avenue Pike, Murray Drive to Bruhin Road
Central Street, Bruhin Road to Neyland Drive
Chapman Highway
Cherokee Boulevard, Scenic Drive to Kingston Pike
Cherokee Trail, Alcoa Highway to Scottish Pike
Cherry Street, Cecil Avenue to Magnolia Avenue
Chilhowee Drive, Rutledge Pike to Holston Hills Drive
Clancy Avenue, Blount Avenue to Scottish Pike
Clinch Avenue, 22nd Street to 11th Street
Clinton Highway
Coleman Road, Lonas Drive to Papermill Drive
Concord Street, Kingston Pike to Sutherland Avenue
Copper Kettle Street, Western Avenue to Ed Shouse Drive
Cross Park Drive, Cedar Bluff Road to Bridgewater Road
Cumberland Avenue

Dale Avenue, 21st Street to Western Avenue
Dandridge Avenue, Hill Avenue to Brooks Avenue
Dandridge Avenue, Brooks Avenue to Riverside Drive
Davenport Road, Sevier Avenue to Moody Avenue
Deane Hill Drive, Morrell Road to Kingston Pike
Delrose Avenue, Dandridge Avenue to Boyds Bridge Pike
Downtown West Boulevard, Kingston Pike to Gleason Road
Dry Gap Pike, Central Avenue Pike to Rifle Range Road
Dutch Valley Drive, Bruhin Road to Old Broadway

Ed Shouse Drive, Western Avenue to Middlebrook Pike
11th Street, Western Avenue to Cumberland Avenue
Elm Street, Oldham Avenue to Bernard Avenue
Emory Road
Essary Drive, Broadway to Briarcliff Road

Fairmont Boulevard, Broadway to Whittle Springs Road
5th Avenue, University Avenue to Winona Street
Forest Glen Drive, Tobler Lane to Kingston Pike
Forest Park Boulevard, Sutherland Avenue to Kingston Pike
Fairway Road, Valley View Road to Washington Pike

Francis Road, Middlebrook Pike to Amherst Road

Gallaher View Road, Middlebrook Pike to Gleason Drive
Gap Road, I-640 to Wilson Road
Gleason Drive, Morrell Road to Gallaher View Road
Gov. John Sevier Highway
Greenway Drive, Broadway to Washington Pike

Hall of Fame Drive, E. Hill Avenue to Broadway
Haynes Sterchi Road, Dry Gap Pike to Cedar Lane
Heiskell Avenue, Texas Avenue to Central Street
Henley Street
Highland Avenue, 22nd Street to 16th Street
Highland Drive, Inskip Road to Broadway
Hillview Avenue, Ault Road to Rutledge Pike
Hinton Road, Third Creek Road to Western Avenue
Hollywood Drive, Lonas Drive to Sutherland Avenue
Hotel Road, Broadway to Holbrook Drive

Inskip Drive, Clinton Highway to Bruhin Road
Inskip Road, Cedar Lane to Adair Drive
Island Home Avenue, Sevier Avenue to Island Home Pike
Island Home Pike, Island Home Avenue to Sevierville Pike

Jacksboro Pike, Tazewell Pike to Broadway
Jackson Road, Amherst Road to Cecil Johnson Road
James White Parkway
Johnston Street, Heiskell Avenue to Tennessee Avenue

Keith Avenue, Beaumont Avenue to Sanderson Road
Kingston Pike
Knott Road, Middlebrook Pike to Tenwood Drive

Lake Loudoun Boulevard, Volunteer Boulevard to Neyland Drive
Liberty Street, Keith Avenue to Sutherland Avenue
Lonas Drive, Weisgarber Road to Middlebrook Pike
Loves Creek Road, Millertown Pike to Rutledge Pike
Lyons Bend Road, Northshore Drive to Glen Cove Drive
Lyons View Pike, Northshore Drive to Kingston Pike

Mabry Hood Road, Pellissippi Parkway to Kingston Pike
Magnolia Avenue
Mall Road N, Millertown Pike to Washington Pike
Mall Road S, Washington Pike to Millertown Pike
Martin Luther King, Jr. Avenue, Dandridge Avenue to Holston Drive
Martin Mill Pike, Chapman Highway to Ogle Avenue
Maryville Pike, Ogle Avenue to Caleb Avenue
McCalla Avenue, Jessamine Street to Martin Luther King, Jr. Avenue
McDonald Road, Boyds Bridge Pike to Sunset Road
McKamey Road, Amherst Road to Western Avenue
Merchant Drive, Pleasant Ridge Road to Central Avenue Pike
Middlebrook Pike
Millertown Pike, Washington Pike to Mill Road

Mineral Springs Road, Broadway to Whittle Springs Road
Montvue Road, Kingston Pike to Gleason Road
Moody Avenue, Chapman Highway to South Knoxville Boulevard
Morrell Road, Kingston Pike to Northshore Drive
Murray Drive, Pleasant Ridge Road to Central Avenue Pike

Neubert Springs Road, Martin Mill Pike to W. Ford Valley Road
Neyland Drive
Northshore Drive

Ogle Avenue, Maryville Pike to Martin Mill Pike
Oglewood Avenue, Harvey Street to Broadway
Old Broadway, Broadway to Mineral Springs Road

Palmetto Road, Western Avenue to Sullivan Road
Papermill Drive, Kingston Pike to Liberty Street
Parkdale Road, Rifle Range Road to Cedar Lane
Parkside Drive, City Limit to beginning of N. Peters Road
Pellissippi Parkway
N. Peters Road, Kingston Pike to beginning of Parkside Drive
Pleasant Ridge Road, Western Avenue to City Limit (N. of Murray Drive)
Proctor Street, Middlebrook Pike to Western Avenue
Prosser Road, Buffat Mill Road to Magnolia Avenue

Ray Mears Boulevard, Downtown West Boulevard to Montvue Road
Riverside Drive, South Knoxville Boulevard to Delrose Drive
Riverside Drive, Delrose Drive to Holston Hills Road
Rutledge Pike

Sanders Drive, Adair Drive to Jacksboro Pike
Sanderson Road, Pleasant Ridge Road to Keith Avenue
Scenic Drive, Kingston Pike to Southgate
17th Street, Western Avenue to Cumberland Avenue
Sevier Avenue, Gay Street to Island Home Avenue
Sevier Avenue, Island Home Pike to Sevierville Pike
Sevierville Pike, Sevier Avenue to City Limit (E. of E. Ford Valley Road)
Shea Street, Western Avenue to College Street
Sisk Road, Hazelwood Road to Pleasant Ridge Road
South Knoxville Boulevard
Strawberry Plains Pike, Bell Lane to Huckleberry Springs Road
Stone Road, Chapman Highway to Magazine Road
Sullivan Road, Western Avenue to Pleasant Ridge Road
Sutherland Avenue, University Avenue to Westwood Drive

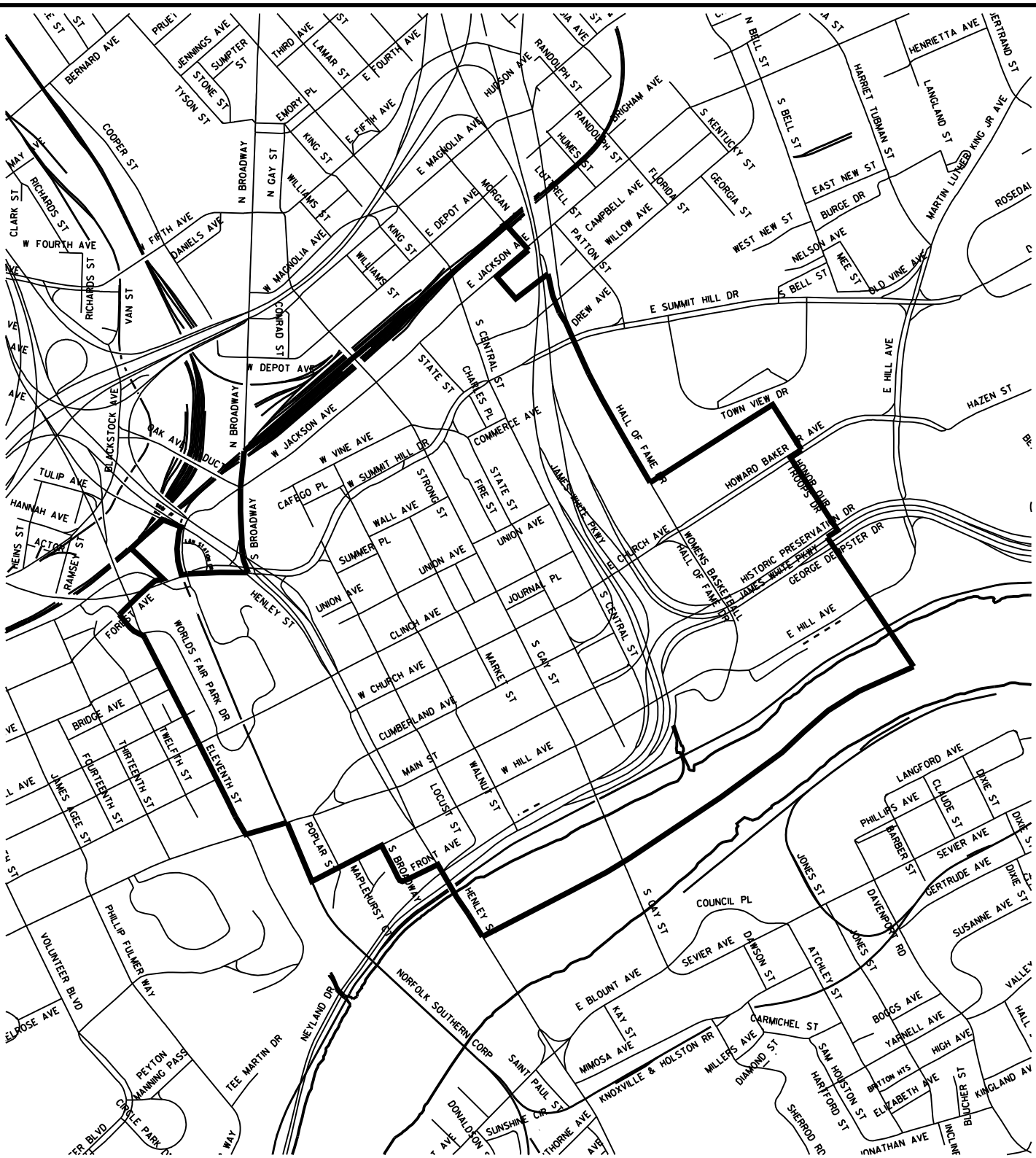
Tazewell Pike
Tennessee Avenue, Western Avenue to Johnston Street
Texas Avenue, Western Avenue to Heiskell Avenue
Third Creek Road, Hinton Road to Middlebrook Pike
Tillery Road, Wilson Road to Central Avenue Pike
Tobler Lane, Sutherland Avenue to Forest Glen Drive
21st Street, Dale Avenue to Leslie Avenue

University Avenue, Western Avenue to Bernard Avenue

Valley View Drive, Whittle Springs Road to Washington Pike
Vanosdale Road, Buckingham Road to Middlebrook Pike
Volunteer Boulevard, Cumberland Avenue to Cumberland Avenue

Walker Springs Road, Walbrook Drive to Kingston Pike
Walnoaks Road, Sullivan Road to Pleasant Ridge Road
Washington Pike, Broadway to Murphy Road
Weisgarber Road, Middlebrook Pike to Papermill Drive
Western Avenue
Westland Drive, Northshore Drive to Morrell Road
Westwood Drive, Sutherland Avenue to Papermill Drive
Whittle Springs Road, Mineral Springs Avenue to Cecil Avenue
Wilson Road, Pleasant Ridge Road to Clinton Highway
Winston Road, Kingston Pike to Corteland Drive
Woodland Avenue, I-75 to Broadway
Woodlawn Pike, Chapman Highway to Chapman Highway

Young High Pike, Martin Mill Pike to Woodlawn Pike



CITY OF KNOXVILLE

CENTRAL BUSINESS IMPROVEMENT DISTRICT (CBID)